NAVAIR

Lakehurst, New Jersey

News Release

Telephone: (732) 323-2620,
Pager: 1-888-646-2851
Fax: (732) 323-7676

News Release No. 5-1
Date: 2 May 2003
www.lakehurst.navy.mil

Contact: Thomas Worsdale, Public Affairs Officer
Lawrence Lyford, Deputy Public Affairs Officer

World's Only Facility with this Capability

NAVAIR Lakehurst tests help move equipment to the fleet

NAVAIR Lakehurst's Steam Catapult (TC13 Mod 2) was active again this week. After eight hours of receiving steam, its critical parts expanded to operational dimensions and it was ready for the arrival of the test aircraft and inert missiles. With it, engineers completed test programs using the Navy's F/A-18 E/F Super Hornet aircraft carrying AIM 9X and AIM 120C missiles for representative aircraft carrier launches.

This was the first time that the new AIM 9X was catapult tested on the Super Hornet. Engineers completed 16 catapult launches at increasing velocities and load factors.

The team completed the initial tests with the aircraft aligned to the catapult with the expected accuracy. On subsequent tests, the higher load ones, the launch crew deliberately misaligned the aircraft relative to its proper (straight ahead) launch direction by up to 12 degrees. The team built up to launching the aircraft at full power with afterburners.

Aircraft launch velocity was above 200 mph at these conditions. Key aircraft and catapult parameters, including Aircraft "G" loads, launch bar axial tow force, and key catapult steam pressures and strokes were measured and analyzed. These relate to the stress in equivalent gravity units on the pilot and aircraft due to the rapid launch

acceleration, the force on the bar attaching the aircraft to the steam catapult and the steam pressures at fixed distances along its long piston stroke.

The tests with inert weapons and land-based catapult insures that live AIM 9X and/or AIM 120C missiles can be installed on the F/A-18 E/F aircraft and successfully launched from any Navy catapult and be fully operational when needed. For instance, even though the F/A-18E/F is longer and heavier and has more powerful engines than its earlier versions, the bottom of the attached missiles may not impact the deck or even come too close during a launch and their attachment to the aircraft and electronic link may not fail. Safety margins must be maintained even if human errors are made during a launch set up.

These tests insure the new aircraft with new missiles neither of which existed when the catapult system was designed decades earlier will work together even if human errors are made at sea that reduce the margins of safety. Impact of the stress of these launches at higher weights and energies must be demonstrated at NAVAIR Lakehurst before operational use.

"Lakehurst was able to step up and demonstrate that it is capable of conducting these aircraft launch tests and well as bringing new equipment to the fleet that will be launched safely and be ready to use," said Carl Carew, test site operations division manager.

NAVAIR Lakehurst is the only facility in the world equipped to provide the full spectrum of support for aircraft launch, recovery, and support equipment systems. As the only Navy facility equipped with fleet representative versions of the steam powered catapults (and arresting gear) currently deployed on Navy aircraft carriers, NAVAIR Lakehurst is able to conduct tests of new catapults and arresting gear components as well as the catapult and arresting gear tests required by new aircraft, weapons, and systems. NAVAIR Lakehurst – A Heritage of Service, A Model for the Future.

-end-

“NAVAIR provides advanced warfare technology through the efforts of a seamless, integrated, worldwide network of aviation technology experts. From professional training to carrier launch; from sensor data to precision targeting; from aircraft and weapons development to successful deployment; from real-time communication to aircraft recovery NAVAIR provides dominant combat effects and matchless capabilities to the American warfighter."